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July 18, 1961

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Dear Sirs:

Enclosed are four copies of the minutes of the meeting held at Washington on July 18, 1961

Sincerely yours.

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Enclosures - 4

"NOTE: THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, ACT 25 JUNE 1948 (PUBLIC LAW 772 - 80TH CONG; 18 U.S.C. 793 AND 794; 62 STAT. 683). THE TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW"

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MINUTES OF THE MEETING WITH THE WASHINGTON CUSTOMER IN WASHINGTON - July 18, 1961

Those present

Customer:
 Bob H.
 Hil T.
 Mort W.

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The major purpose of this trip was to review the mechanical design of the first ruggedized HRT-2 Beacon transmitters before starting the remaining 25. It was requested that a screw on type of external generator connector replace the present push-pull type connector. It was suggested by the customer that the jumper for continuous tone operation be made more readily removable by hand, rather than require a screwdriver to pry it loose. The tone cycle of 30/5 seconds will be shortened to about 15 seconds of carrier and 5 of tone. Color coding of the unit to tie together associated controls and connectors was discussed. It was pointed out by the customer that the unit will be used in maritime operations and that effort should be directed toward making it salt spray resistant.

The unit was set up using a Mallory "Rectopower" battery charger as a supply and the tuning procedure was reviewed. The customer expressed concern over the lack of a positive and exact indication of peak tuning into the 16 ft. whip antenna. The tuning into a 50 ohm load was not as critical in that these loads will probably have a self-contained meter to indicate peak antenna current. The problem was not lack of brilliance in the indicating light, but lack of change in light with tuning. The customer requested that a setup be made using incandescent lights for his viewing on his next trip (Subsequent investigation revealed excessive power to the neon caused the maximum brilliance over a wide range of tuning. Reduction in power permits a much better indication of peak tuning.)

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The unit shown the customer was examined from the standpoint of vibration. It was pointed out that the unit had not been checked yet and that some changes in component mounting would be necessary. Burn-in time on the units to be delivered was set at 100 hours. One of the units left for life testing was run at +70°C ambient for over 1000 hours without failure when the test was discontinued.

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The cost of the electrical parts was discussed. The cost of these parts is about \$300 of which the final transistor is \$140. Mechanical parts have not been priced yet.

A brief report was given on the test transmitter. A small package has been breadboarded which operates from three 4 volt mercury cells and provides a field strength of about 300 μ v per meter at 50 ft. It was stated that a desired output would be a maximum of 1000 μ v/M at 100 ft. The customer stated that the AN-6 or AN-7 A.D.F receivers were the most used by his people.

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A discussion of the antenna program followed. [] stated that ground tests would be made first, comparing the 16 ft. whip and the AN/A-42. Then air tests would follow. The customer enumerated some of the tests made by his operational people. They obtained ranges of over 50 miles with a BN-2 feeding a 150 ft quarter wave and ranges of 10 to 15 miles using the AN/A-42 top loaded antenna. Tests with a 75 ft antenna gave ranges similar to the AN/A-42 possibly due to inability to match the antenna. Large degradation in performance was obtained during night operations. It was suggested that [] conduct night tests to verify these results and determine the cause for the degradation. The customer stated that long wire antennas a short distance above ground gave too many lobes to be useful in this type of application. They would be interested in results obtained from long wires from ground level to high trees. A copy of the customers operational report will be forwarded [] after some deletions. [] will run tests of various antennas and provide a matching and tuning network to work with the HRT-2.

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The customer stated that a propane generator should be available in two weeks but that a hand crank generator would not be available for six months. The propane generator might be delivered by the customer on his next trip [] which is tentatively scheduled for the week ending August 12.

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